In the Patented Claims:

2 (amended). The apparatus of claim 1, wherein said coded signal is a chirp.

Claim 12, line 1, after "comprising:" begin a new paragraph.

13 (amended). The apparatus of claim 12, wherein said array has a plurality of rows and a plurality of columns each having one of said plurality of control channels associated therewith;

said control signal generating means further including means for generating row and column control signal components; and

wherein each transducer element is uniquely and simultaneously controlled by a combination of the row and column control signal components for that transducer element.

23 (amended). An acoustic imaging apparatus, comprising:

control logic;

a plurality of transducer elements arranged in an array, each coupled to said control logic and capable of transmitting an acoustic signal representative of an electrical transmit control signal propagated from said control logic and generating an electrical receive signal representative of an incident acoustic signal;

means within said control logic for generating an electrical transmit control signal for each transducer element that contains a frequency based coded signal and [cause] causing each transducer to emit an acoustic signal representative of said coded signal;

means for modifying the frequency and [chase] phase of an electrical receive signal of each transducer element for coherently combining reflected coded signals within the electrical receive signals thereof;

means coupled to said modifying means for decoding the combined reflected coded signals to achieve a time delay based on that coded signal; and

means coupled to said decoding means for generating image data from an output signal therefrom.

Please add the following new claims:

24. (amended) An acoustic energy transmitting apparatus, comprising:

a plurality of electro-acoustic transducer elements arranged in an M row by N column array, where M and N are positive integers and at least one of M and N is greater than one;

control circuit for propagating row and column control signals for each of said M rows and said N columns, each control signal having a frequency and a phase component; and

wherein each transducer element is configured to function as an active device so as to achieve a combining at each transducer element of the frequency and phase components of the row and column control signals for that transducer element in such a manner as to provide a focused acoustic signal at a given focal distance and direction from said array.

25. The apparatus of claim 24, wherein the electric signal to acoustic signal relationship and vice versa of each transducer element is non-linear.

26. (amended) The apparatus of claim 24, wherein said control circuit includes a control channel for each of said M rows and a control channel for each of said N columns, and wherein the number of control channels is fewer than the number of transducer elements.

27. The apparatus of claim 24, wherein said control circuit is configured such that the row and column signals for at least some of the transducer elements includes a coded signal.

28. The apparatus of claim 27, wherein M equals one.

29. (amended) An acoustic energy transmitting apparatus, comprising:

a plurality of electro-acoustic transducer elements arranged in an M row by N column array, where M and N are positive integers and at least one of M and N is greater than one;

M row control lines, each coupled to the transducer elements in one of said M rows;

N column control lines, each coupled to the transducer elements in one of said N columns;

control circuit for propagating row and column control signals for each of said M rows and said N columns, a control signal for each transducer element being a combination of one of said row control signals and one of said column control signals;

a plurality of active devices, each coupled to one of said transducer elements for combining the row control signal and the column control signal of that transducer element;

wherein said transducer elements, control circuit and active devices are configured so as to achieve a combining at each transducer element of the row and column control signals for that transducer element in such a manner as to provide a focused acoustic signal at a given focal distance and direction from said array; and

wherein each of said electro-acoustic transducer elements is configured within said apparatus to function in a non-linear manner in operation.

30. (amended) An acoustic energy receiving apparatus, comprising:

a plurality of electro-acoustic transducer elements arranged in an M row by N column array;

control circuit for propagating row and column control signals for each of said M rows and said N columns, each row and column control signal having a frequency and a phase component; and

wherein said transducer elements and said control circuit are configured so as to achieve a combining at each transducer element of the frequency and phase components of the row and column control signals for that transducer element with a resultant electrical receive signal, corresponding to an acoustic signal incident on that transducer element, in such a manner as to modify the frequency and phase of the transducer element's electrical receive signal so as to achieve the coherent combination of the modified electrical receive signals from all of said plurality of transducer elements; and

a filter that filters spurious frequencies output from the transducer elements;

wherein said transducer elements, control circuit and filter are configured to achieve focused acoustic signal reception at a given distance and direction from said array.

31. The apparatus of claim 30, wherein said transducer elements and said control circuit are configured to achieve dynamic focused acoustic signal reception.

32. The apparatus of claim 31, wherein the electric signal to acoustic signal relationship and vice versa of each transducer element is non-linear.

33. (amended) The apparatus of claim 30, wherein said filter includes a matched filter.

34. The apparatus of claim 33, wherein said matched filter includes a conjugate of a coded signal.

35. The apparatus of claim 29, wherein M equals one.

36. (amended) The apparatus of claim 30, further comprising a circuit that generates image data from the coherent combination of transducer element receive signals.

37. (amended) The apparatus of claim 30, wherein said control circuit includes a control channel for each of said M rows and a control channel for each of said N columns, and wherein the number of control channels is fewer than the number of transducer elements.

38. An acoustic energy receiving apparatus, comprising:

a plurality of electro-acoustic transducer elements each capable of generating an electrical receive signal in response to an incident acoustic wave and arranged in an M row by N column array, where M and N are positive integers and at least one of M and N is greater than one;

control circuit for propagating row and column control signals for each of said M rows and said N columns, the control signal for each

transducer element being a combination of the row and column control signals for that transducer element;

wherein said row and column control signals are configured, for each transducer element, such that when combined with the electrical receive signal of that transducer element the electrical receive signal is modified in such a manner as to permit the simultaneous processing of the modified electrical receive signals from said plurality of transducer elements;

a first circuit that combines the modified electrical receive signals of each of said transducer elements to form an array output signal; and

a second circuit coupled to said first circuit that generates image data from said array output signal.

39. The apparatus of claim 38, wherein M equals one.

40. The apparatus of claim 24, wherein each transducer element includes non-linear electro-acoustic material.